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AP/1761 #5

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Domingues	**Examiner:**	T. Tran Lien
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DANIEL C. SCHULTE

APPEAL BRIEF

Dear Sir or Madam:

This is an appeal from the Final Rejection mailed May 1, 2003.

This Appeal Brief is being submitted in triplicate and enclosed is the fee of $320.00 for filing the brief.

Applicant's Notice of Appeal was received by the United States Patent and Trademark Office on July 28, which means that the two-month deadline for filing this Appeal Brief is September 28, 2003, which fell on a Sunday. This Appeal Brief, mailed on Monday September 29, 2003, is believed to be timely, with no extension of time or fee required.

It is believed that no fee is presently due in connection with the filing of this Appeal Brief. Should any fee be presently required, the Commissioner is authorized to charge Kagan Binder Deposit Account No. 50-1775 and thereafter notify us of the same.

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I. Real Party in Interest

The Pillsbury Company, the assignee of record, is the real party in interest. The Pillsbury Company is a wholly-owned subsidiary of General Mills, Inc.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

Claims 1-42 are pending in the application.

Claims 1-42 stand rejected under 35 USC 103(a) over Atwell et al. (U.S. Pat. No. 6,042,852) in view of Katz et al. (U.S. Pat. No. 4,792,456).

This rejection of claims 1-42 is appealed.

IV. Status of Amendments

An amendment filed on July 1, 2003, and subsequent to the Final Rejection mailed May 1, 2003, proposed the addition of claims 43-54. This amendment was not entered. According to the Advisory Action mailed July 16, 2003, added claims 43-54 were not entered, because claims 43-54 present additional claims without canceling a corresponding number of finally rejected claims. Accordingly, the claims on appeal do not include the proposed added claims 43-54, but include claims 1-42 as these claims were pending at the Final Rejection, as filed and amended during prosecution prior to the Final Rejection.

No other amendment has been proposed after Final Rejection.

V. Summary of Invention as Recited in Appealed Claims

The invention relates to chemically leavenable dough compositions and methods relating to dough compositions. Various embodiments of the invention relate to dough compositions that contain selected components of a chemical leavening system, such as one or more of an acidic leavening agent selected based on solubility properties, a basic leavening agent that is encapsulated, and a barrier material that is selected based on its melting properties or solid fat index.

The invention also relates to methods of preparing a dough composition. Various embodiments of the methods relate to steps that account for selected properties of a composition as described above, such as the melting temperature of a barrier material or the solubility of an acidic active ingredient.

The Invention as Featured in Claim 1 and Dependent Claims 2-26 and 36

In certain claimed embodiments, such as those of claim 1, the invention relates to a dough composition that includes an encapsulated basic chemical leavening agent, an acidic chemical leavening agent that has a relatively low solubility at below baking temperature and that is substantially soluble during baking, and a barrier material that separates the encapsulated basic agent from the acidic agent at below baking temperature and degrades at or above baking temperature. This combination of ingredients of a chemical leavening system provides a dough composition that exhibits leavening properties that include inhibited leavening at below baking temperature, and wherein the leavening agents react during baking to substantially leaven the dough. The melting point of the barrier material and the solubility of the acidic agent at the different conditions experienced before baking (e.g., at refrigerated storage) and during baking, are selected to achieve a low level of leavening activity at below baking temperature and a higher level of leavening activity at baking temperatures.

More specifically, the barrier material featured in claim 1 is selected to separate basic ingredient from acidic ingredient at below baking temperature. This prevents contact and reaction of the basic and acidic active ingredients at below baking temperature, which inhibits leavening of the dough composition. Additionally, the acidic ingredient featured in claim 1 is selected to exhibit a low solubility at below baking temperature. This further inhibits reaction of the active ingredients at below baking temperature.

The overall effect inhibits reaction of basic active ingredient and acidic active ingredient at below baking temperature, resulting in reduced leavening, e.g., at refrigerated storage temperatures. At baking temperatures, a dough composition of claim 1 features completely different leavening activity. The acidic active ingredient of claim 1 is featured to be substantially soluble during baking. The barrier material of claim 1 is featured to degrade at or above baking temperature. Thus, while reaction of the active ingredients is inhibited at below baking temperature, reaction of the active ingredients is allowed at baking temperatures and above to substantially leaven the dough during baking.

The Invention as Featured in Claim 27 and Dependent Claims 28, 37, 38, and 39

The invention as featured in claim 27 includes a dough composition comprising a basic active ingredient, an acidic active ingredient, and a barrier material. At below baking temperature, the barrier material separates the basic active ingredient from the acidic active ingredient to inhibit reaction of the basic active ingredient and the acidic active ingredient. The barrier material degrades at or above baking temperature to allow the basic active ingredient and the acidic active ingredient to substantially leaven the dough composition during baking. Also, the barrier material has a solid fat index of at least about 50% at 75°F.

The use of a barrier material that has the featured solid fat index provides barrier properties which result in selected leavening properties of the dough composition, e.g., at below baking temperatures and during baking. Examples of preferred barrier materials having the recited solid fat index are featured in claim 28.

The Invention as Featured in Claims 29 Through 34

Claim 29 recites an aspect of the invention relating to a method of producing a cooked dough product. The method includes combining dough ingredients that include a basic active ingredient and an acidic active ingredient, wherein the basic active ingredient is encapsulated with barrier material. The dough ingredients are combined at a temperature below the melting temperature of the barrier material, and the acidic active ingredient is selected to have relatively low solubility in the dough composition at below baking temperature. The dough composition is refrigerated at a temperature below the melting temperature of the barrier material. The dough composition is baked at a temperature that causes the barrier material to

melt. The basic active ingredient and acidic active ingredient then react to leaven the dough composition during baking.

Embodiments of this method relate to dough compositions that are inhibited from leavening at below baking temperature due to the selection of the featured acidic active ingredient and the melting properties of the barrier material. By being inhibited from reacting below baking temperature, e.g., during refrigerated storage, the chemical leavening agents are retained during storage and are then exposed to each other at baking temperatures to cause the dough to leaven during baking.

The Invention as Featured in Claims 35 and 40 Through 42

The invention of claim 35 features a method of producing a cooked dough product. The method includes combining dough ingredients that include a basic active ingredient and an acidic active ingredient, the basic active ingredient and the acidic active ingredient being separated by a barrier material having a having a solid fat index of at least about 50% at 75°F. The dough ingredients are combined at a temperature below the melting temperature of the barrier material. The dough composition is refrigerated at a temperature below the melting temperature of the barrier material, and the dough composition is baked at a temperature that raises the temperature of the dough composition to above the melting temperature of the barrier material. The barrier material melts to expose one or more of the basic active ingredient or acidic active ingredient to the dough composition and to allow the basic active ingredient and acidic active ingredient to react to leaven the dough composition during baking.

VI. Issues

The issue on appeal is whether claims 1-42 are patentable under 35 USC 103(a) over Atwell et al. (U.S. Pat. No. 6,042,852) in view of Katz et al. (U.S. Pat. No. 4,792,456).

VII. Grouping of Claims

Claims 1 through 20 and 36 stand or fall based on the patentability of claim 1.

Claims 27, 28, 37, 38, and 39 stand or fall based on the patentability of claim 27.

Claims 29 through 34 stand or fall together based on the patentability of claim 29.

Claim 35, 40, 41, and 42 stands or fall together based on the patentability of claim 35.

VIII. Argument

None of claims 1-42 is taught or suggested by the Atwell reference, or by the Atwell reference combined with the Katz reference.

A. CLAIMS 1-26 AND 36 WOULD NOT HAVE BEEN SUGGESTED BY THE ATWELL REFERENCE, OR BY THE ATWELL REFERENCE COMBINED WITH THE KATZ REFERENCE

As discussed above, claim 1 recites a dough composition that includes a chemical leavening system that combines selected barrier material, selected acidic component, and encapsulated basic component, in a manner which achieves inhibited leavening activity at below baking temperature, and, additionally, achieves leavening activity at baking temperature sufficient to substantially leaven the dough composition. See claim 1.

The Atwell reference does not include any specific suggestion of a dough composition that includes the specific combination of ingredients in a leavening system, or such a combination of leavening properties. The Katz reference fails to remedy the shortcomings of the Atwell reference.

The Atwell Reference

The Atwell reference describes a dough composition that leavens during refrigerated storage within its package, which is substantially different from the composition of claim 1, designed to inhibit leavening at below baking temperatures. The Atwell reference, instead of inhibiting leavening, requires leavening during refrigeration, and even describes the use of a release valve as part of a product package to allow excess leavening gas generated during refrigerated storage to be released from the package. Atwell states:

> A refrigerated dough system is provided which includes a dough in a container flushed with a gas. The dough contains a leavening ingredient capable of generating gas in the dough after the dough is sealed in the container. The container is provided with a pressure release mechanism to release excess pressure generated within the container as the dough leavens and during storage. The dough system is capable of sustaining a leavened dough structure during storage so that upon baking the dough, the resulting baked product resembles a freshly prepared and baked dough.

The Atwell Abstract (Emphasis ours).

The reference, in a general sense, does not describe any specific technology to inhibit leavening of a dough composition before baking, as claimed. In fact, to the contrary, the Atwell reference describes dough compositions that include the use of leavening ingredients designed with intent to generate leavening gas "in the dough after the dough is sealed in the container," i.e., during refrigerated storage. See, also, e.g., the Atwell patent at column 3, lines 24-27:

> The dough is stored at a refrigeration temperature and a pressure of less than about 3 psi and preferably less than 1 psi. The leavening reaction in the dough continues inside the container so the desired raw dough specific volume is reached after the dough has been packaged.

. . .

> The dough, once sealed inside the container, expands in the container form and takes on the shape, imprint or design of the container.

The Atwell patent at column 4, lines 60-62.

Thus, a prevailing concept of the Atwell compositions is that they are designed to produce carbon dioxide before baking, e.g., during packaged refrigerated storage.

As for specific the leavening ingredients that Atwell identifies to achieve this refrigerated-storage leavening, such reference generally describes that any of a variety of yeast or chemical leavening ingredients may be used:

> Chemical leavening ingredients may also be used, either alone or in combination with yeast. Chemical leavening ingredients typically comprise a leavening acid and a leavening base, the reaction of which results in the generation of carbon dioxide. Leavening acids are sodium, calcium, or magnesium salts of ortho, pyro and complex phosphoric acids in which at least two active hydrogen ions are attached to the molecule. They may also be organic acids, salts of organic acids or lactones. Examples of leavening acids include monocalcium phosphate monohydrate (MCP), monocalcium phosphate anhydrous (AMCP), sodium acid pyrophosphate (SAPP), sodium aluminum phosphate (SALP), dicalcium phosphate (DCP), dicalcium phosphate dihydrate (DPD), dimagnesium phosphate (DMP), sodium aluminum sulfate (SAS), glucono-delta-lactone (GDL), potassium hydrogen tartrate (cream of tartar), and the like. Sodium bicarbonate, or baking soda, is the most common leavening base, but other leavening bases, such as potassium bicarbonate, ammonium carbonate and ammonium bicarbonate are also useful as leavening bases for bakery products.

Atwell at column 5, lines 14-33. The use of a release valve is then described, to accommodate excess carbon dioxide produced:

> During storage, the dough in the system of the present invention is kept in a low or ambient pressure environment, even as carbon dioxide continues to be generated by the

> dough in the container, because the container has a pressure release mechanism to release excess pressure.

The Atwell reference at column 6, lines 11-15. The Atwell reference finds advantage in the carbon dioxide environment:

> The present invention, because of the enriched carbon dioxide environment, also substantially avoids the occurrence of "grey dough" which occurs when dough is exposed to oxygen.

Atwell at column 6, lines 64-67.

The Atwell reference also generally mentions the possibility of encapsulating one or both of the leavening ingredients:

> Either or both of the leavening acid and leavening base may be encapsulated, so that the leavening reaction does not substantially take place until the proper conditions have been achieved in the dough, such as temperature or moisture.

The Atwell reference at column 5, lines 33-37.

Thus, the Atwell reference generally describes the use of yeast, chemical leavening agent, and optional encapsulation of one or more chemical leavening ingredient, in a dough composition that leavens during refrigerated storage. The leavening system is specifically designed to cause acidic and basic components to react and produce carbon dioxide to leaven the dough during refrigerated storage and prior to baking.

It is apparent from this review of the Atwell reference, that the dough compositions of the reference are designed and intended to exhibit significantly different leavening properties compared to the dough compositions of Applicants' claim 1. The Atwell reference requires leavening at refrigerated storage, whereas claim 1 features a composition that exhibits inhibited leavening at below baking temperature, e.g., during refrigeration, and then substantial leavening during baking.

With respect to particular leavening ingredients and encapsulation, the Atwell reference broadly identifies a variety of yeast and chemical leavening ingredients that it says may be used, optionally with encapsulation. The reference, however, within its broad listing of leavening ingredients, fails to specifically suggest or motivate toward the combination of leavening agents, encapsulation, and barrier material properties recited in Applicants' claim 1. The Atwell reference lists a number of acidic active ingredients, some of which are freely soluble at room temperature (e.g., glucono-delta-lactone). The reference does not indicate any

preference for less soluble acidic agents. Further, the Atwell reference also does not suggest or motivate toward a barrier material as claimed, which is one that specifically separates acid from encapsulated base at temperatures below baking temperature and then degrades at or above baking temperature. While many acids and generic barrier materials are described, the reference does not specifically suggest or motivate toward those of claim 1.

Overall, the broad description of the Atwell reference is not shown to suggest or motivate toward the combination of claim 1, including: (1) the selection of a barrier material that inhibits reaction of acidic and encapsulated basic ingredients at below baking temperature; (2) an acidic active ingredient that has a relatively low solubility at below baking temperature but is substantially soluble during baking; and (3) barrier material that degrades at or above baking temperature to allow the basic and acidic active ingredients to substantially leaven the dough composition during baking.

The general recitation of a variety of basic active ingredients, plus a variety of acidic ingredients, either or both of which may be encapsulated, does not add up to a specific suggestion of the exact combination of chemical leavening components featured in Applicants' claim 1, or the specific leavening properties achieved. One of skill, upon reading the Atwell reference, would not have been motivated to select, from the acidic and basic active ingredients listed (with the possibility of encapsulating one or both), the specific combination of a low solubility acid with a barrier material (encapsulation) and encapsulated basic active ingredient, so as to obtain a combination that provides inhibited reaction of the acid and base at below baking temperature while also providing substantial leavening of the dough composition during baking.

One of skill reading the Atwell reference would have selected an acid and base combination that would provide the leavening properties discussed throughout the Atwell reference -- leavening during refrigerated storage. The skilled artisan would have been led to use a combination of ingredients that provides leavening of the dough composition during refrigerated storage, as described by Atwell, not necessarily toward a combination of acidic and basic ingredients that inhibits leavening at below baking temperature as recited in claim 1.

Thus, the discussions found in the Atwell references itself cannot be said to suggest the combination of features of claim 1, which require a specific type of barrier material (e.g., having specific melting properties), a specific type of acidic active ingredient (having

relatively low solubility), and an encapsulated basic ingredient, so as to produce a dough composition that exhibits the featured leavening properties of inhibited leavening at below baking temperature and substantial leavening at baking temperature. The Atwell reference might be said to at least implicitly teach away from the claimed subject matter by teaching a combination of ingredients that causes leavening at below baking temperature, during refrigerated storage.

The Katz Reference

The Katz reference fails to remedy the shortcomings of the Atwell reference.

The Katz reference fails to teach: the selection of a barrier material that inhibits reaction of acidic and encapsulated basic ingredients at below baking temperature; in combination with an acidic active ingredient that has a relatively low solubility at below baking temperature but is substantially soluble during baking; wherein the barrier material degrades at or above baking temperature to allow the basic and acidic active ingredients to substantially leaven the dough composition during baking.

The Katz reference, like Atwell, describes dough compositions that are designed and intended to leaven, by carbon dioxide produced by reaction of chemical leavening ingredients, within a sealed package.

Somewhat different from the Atwell reference, the Katz reference describes proofing a dough composition "before it is refrigerated." (See, e.g., the Katz reference at column 2, lines 36, 37.)

Also different from the Atwell reference, the Katz reference only describes a single acidic chemical leavening ingredient, glucono-delta-lactone, an acid that is freely soluble at room temperature. The Katz reference describes a leavening system of "encapsulated glucono-delta-lactone and regular baking soda." (See, e.g., the Katz reference at column 1, lines 66, 67.) This, of course, is regular (non-encapsulated) baking soda, used in combination with the freely soluble encapsulated acid, encapsulated glucono-delta-lactone. At the top of column 3, the Katz reference also describes using encapsulated baking soda with uncoated glucono-delta-lactone. Importantly, the reference, as does Atwell, generically mentions that either of the basic ingredient or the acidic ingredient may be encapsulated. (See, the Katz reference at column 3, lines 5-7).

The Rejection

Looking at the specific language of the outstanding rejection, e.g., as summarized at paragraph 3 of the Final Office action, such rejection fails to establish how the combination of the Atwell reference with the Katz reference would have taught or suggested the subject matter of Applicants' claim 1, or would have motivated one of skill to have arrived at the subject matter of Applicants' claim 1. The rejection states:

> While Atwell et al do not contain the specific wording with respect to the acidic leavening ingredient, they do disclose the same leavening ingredients claimed. Atwell et al disclose sodium aluminum phosphate, sodium aluminum sulfate, sodium acid pyrophosphate, monocalcium phosphate monohydrate . . . . Atwell et al also disclose either or both of the leavening acid and leavening base may be encapsulated; so, they do teach the use of an encapsulated basic chemical leavening ingredient in combination with the relatively low solubility acidic active ingredient. Applicants argue that the list of leavening acids in Atwell et al includes acids that have a range of solubilities. While this might be true, applicant can not ignore the fact that Atwell also disclose the same leavening acids as the claimed products. The disclosure of Atwell et al would have suggested to one skilled in the art various combinations including the combination of sodium aluminum sulfate with encapsulated basic active ingredient.

The Final Office action, at paragraph 3.

With respect to the conclusion that the Atwell disclosure would have suggested the combination of sodium aluminum sulfate with encapsulated basic active ingredient, Applicants disagree for the reasons set forth below. Further, Applicants point out that even if this combination *were* suggested by the Atwell reference, such a teaching or suggestion would still fail to support a rejection of claim 1 that considers all of the features of claim 1, such as the required barrier material.

As described in Applicants' response of February 5, 2003, the Atwell reference identifies a number of acidic active ingredients having various degrees of solubility, including, for example, glucono-delta-lactone (GDL), which is freely soluble at 25C. The reference treats the list of acidic active ingredients as equivalent, except that all of the examples use GDL. In no way does the reference indicate any preference for relatively insoluble acidic active ingredients. Perhaps more significantly, the Atwell reference expressly and exclusively describes dough compositions that are designed to undergo leavening at refrigerated storage conditions. As such, the disclosure includes at least an implicit preference for the use of an acidic component that is reactive at refrigerated storage temperatures, e.g., an acidic active

ingredient that is relatively soluble at refrigerated storage temperature, not one that exhibits relatively low solubility at below baking temperature as recited in claim 1.

Furthermore, the Atwell reference includes no mention of any desired melting properties of a barrier material. The Atwell reference does not contain any specific description of a preference for a barrier material that exhibits the properties recited in claim 1, including separating acidic and encapsulated basic active ingredients at below baking temperature and degrading at above baking temperature.

The Katz reference cannot be said to remedy these shortcomings of the Atwell reference. The Katz reference describes only the use of glucono-delta-lactone as an acidic active ingredient. It is not possible to combine the Atwell reference with Katz, to arrive at the subject matter of claim 1, which requires an acid that exhibits a relatively low solubility below baking temperature, when the Katz reference exclusively describes dough compositions that include GDL, an acid that is freely soluble at 25C. Specifically, one of skill who combines the two references at issue would use GDL, which is contrary to claim 1. Therefore, the combination of Atwell with Katz cannot be said to teach or suggest the subject matter of claim 1, which requires among other features an acidic active ingredient that has a relatively low solubility at below baking temperature.

Hindsight

Consequently, the cited combination of references cannot truly be said to teach or suggest the subject matter of claim 1.

The Atwell reference by itself cannot be said to in any sense suggest the use of the combination of acidic active ingredient that has a relatively low solubility at below baking temperature (e.g., SALP); encapsulated basic active ingredient; and barrier material that separates active ingredients at below baking temperature and then degrades at or above baking temperature, as recited in claim 1, to achieve the recited leavening properties. Further, the Katz reference fails to remedy the shortcomings of the Atwell reference. Consequently, neither reference, alone or in combination, has been shown to teach or suggest Applicants' claim 1. The rejection, not being supported by the cited references, can only be based on improper hindsight.

It is Applicants' observation that the rejections of record improperly identify some individual features of Applicants' claims in the prior art, and then assert obviousness of the specific combination of features that make up the subject matter of Applicants' claim 1. The Office action identifies specific acidic ingredients that fall within Applicants' claim 1 (e.g., SALP) from among a list in Atwell that also includes acids that are outside of the scope of such claim (e.g., GDL). The Office action also identifies that an acid or a base may be encapsulated. Further, while the Office action does not even clearly identify a barrier material having the properties as claimed, the Office action concludes that it would have been obvious to select all of the elements of claim 1 from among the whole of the disclosures of the cited prior art, and combine selected features as claimed. In essence, the Office action bases an obviousness rejection on the mere ability to identify some of the features of the claimed subject matter, separately, as part of the prior art. Once such separate features were merely found to exist, the Office action, in pure hindsight, asserts the legal conclusion of obviousness of Applicants' claimed combination.

Should there be any debate as to the hindsight nature of the rejection, the Board is invited to consider the specific language of the Final Office action. As an example, the Office action at paragraph 3 states that the Katz reference is relied on "only" for the teaching of encapsulated material. In other words, the Examiner wishes to select an element of the Katz reference (encapsulated material) without being bound by the entirety of the Katz disclosure. This rejection ignores the fact that the Katz reference relates only to the soluble acid GDL, which is contrary to features expressly required by claim 1. This, by definition, is a piecemeal reconstruction of separate prior art references, in an attempt to obtain separate elements of the claimed subject matter without the combination being based on any true suggestion or motivation from the prior art references themselves.

Such a rejection is untenable, since such a rejection is not grounded in a suggestion or motivation shown to originate from the cited prior art. Instead, such a rejection must have been improperly based on Applicants' own specification and claims, in hindsight. It is axiomatic to the patent law that a rejection cannot be based on a hindsight reconstruction of the prior art, e.g., by picking and choosing separate elements of the prior art and combining those select elements to arrive at the subject matter claimed.

In sum, therefore, the features of claim 1 would not have been obvious over the cited combination of the Atwell and Katz references, and the rejection of claim 1 on the recited basis should be withdrawn or overturned.

The subject matter of claims 2 and 26 through 36, which are dependent on claim 1, would similarly have been non-obvious over the cited references, and the rejection of these claims should also be withdrawn or overturned.

B. CLAIMS 27, 28, AND 37-39 WOULD NOT HAVE BEEN SUGGESTED BY THE ATWELL REFERENCE, OR BY THE ATWELL REFERENCE COMBINED WITH THE KATZ REFERENCE

Claim 27 is rejected over the combination of the Atwell reference with Katz.

The rejection is not based on any teaching or suggestion that can be found to exist within the cited references.

Claim 27 recites a barrier material that has a solid fat index of at least about 50 percent at 75F. An explanation of this feature and its effect on the melting temperature of the barrier material is found in Applicants' specification, e.g., at page 17, line 12 through page 19 line 5. In general, the barrier material of Applicants' dough compositions can preferably have a relatively high melting temperature, e.g., greater than 100F. (See Applicants' specification at page 17, line 17.) A high melting barrier material takes the form of a solid during dough preparation, packaging, and storage, and breaks down during baking. A barrier material that has a high solid fat index (e.g., of at least about 50 percent at 75F) is a particularly preferred barrier material, because it can remain solid at relatively high temperatures and is stable during mixing and processing due to its strength and integrity. (See Applicants' specification at page 18, lines 26-31). The melt point is still as preferred, e.g., greater than 100F. (See Applicants' specification at page 18, line 31.)

The Atwell reference is completely silent on the properties of a barrier material, other than the mention of the possible encapsulation of an acidic or basic active ingredient in a refrigerated dough composition. More generally, the Atwell reference requires a combination of chemical leavening agents that react at refrigerated storage temperature. As such, to the extent that a barrier material is suggested, it should not inhibit reaction of the leavening ingredients at refrigerated storage temperature. More specifically, this would be a barrier

material that exposes the leavening ingredients to the dough at a reasonably low temperature, not one that prevents their reaction until a baking temperature is experienced.

The Atwell reference, which is silent on any specific property of a barrier material, and which requires reaction between chemical leavening ingredients at refrigerated storage temperatures, has not been shown to specifically suggest the use of the barrier material required in claim 27.

The Katz reference fails to remedy this shortcoming of the Atwell reference.

The Katz reference also describes proofing at below baking temperatures. The Katz reference describes proofing a packaged dough composition at temperatures of between 80 and 90F. (See, e.g., the Katz reference at column 2, lines 50-52, and at column 3, lines 11-16.) As with Atwell, a barrier material used to encapsulate a leavening ingredient should not interfere with this specific requirement of the described dough composition.

The Office action bases the rejection of claim 27 on the fact that the Katz reference identifies "partially hydrogenated vegetable oil, preferably, palm oil," as a coating for a leavening agent. According to the Office action, "if the oil is the same, then it obviously has the same solid fat index as claimed."

Applicants disagree.

As discussed on the record, not all partially hydrogenated vegetable oils or palm oils have the same solid fat index, and not all have a solid fat index of at least about 50 percent at 75F. Thus, the Katz reference does not necessarily describe a palm oil that has the featured solid fat index.

Moreover, the use of a barrier material that inhibits leavening at refrigerated storage temperature would potentially hinder the objectives of the Atwell reference, which includes proofing at refrigerated storage temperature. As such, even if the Katz reference actually did describe an oil that has a solid fat index of at least about 50 percent at 75F, one of skill would not have been motivated to use such a barrier material in the dough compositions of the Atwell reference, because a high melting barrier material would not facilitate proofing of the dough composition at refrigerated temperatures.

In sum, the rejection of claim 27 is not supported by the cited references. The rejection of claim 27 as obvious over Atwell in view of Katz should be withdrawn or overturned. The

rejection of claims 28 and 35-38, dependent on claim 27, should similarly be withdrawn or overturned.

C. THE METHODS OF CLAIMS 29 THROUGH 34 ARE NOT SHOWN TO HAVE BEEN SUGGESTED BY THE ATWELL REFERENCE, OR BY THE ATWELL REFERENCE COMBINED WITH THE KATZ REFERENCE

Claim 29 recites a method of producing a cooked dough product, wherein the dough product includes an encapsulated basic active ingredient and an acidic active ingredient, wherein the acidic active ingredient has a relatively low solubility at below baking temperature, and wherein the barrier material melts during baking to allow the basic active ingredient and acidic active ingredient to react to leaven the dough composition during baking. The method includes combining dough ingredients at a temperature below the melting temperature of the barrier material, and storing the dough composition at a temperature below the melting temperature of the barrier material. Claims 30 through 34 depend from claim 29 and therefore include the features of claim 29.

The references fail to specifically discuss any useful or preferred melting temperature of a barrier material. Thus, the references also fail to teach or suggest any preference for a melting point of a barrier material in comparison to the temperature at which the dough ingredients are combined or the resulting dough composition is refrigerated. As discussed above, the Atwell reference only mentions the use of a barrier material, and does not discuss useful or preferred melting temperatures. Atwell, further, overall describes a dough composition that leavens at refrigerated storage temperature, meaning that the leavening agents are not unduly inhibited from reacting at refrigerated conditions, but instead react to produce carbon dioxide to leaven the dough at refrigeration temperatures. The Katz reference also requires proofing at below baking temperature, e.g., below 90F.

The rejection is silent regarding how either reference is believed to teach or suggest the specific steps recited in claim 29, relating to combining ingredients and storing the dough composition at temperatures below the melting point of the barrier material. A supported rejection of obviousness would include a discussion of these features of claim 29. A supported rejection also requires a discussion of how the cited prior art references are believed to differ from claim 29, e.g., with respect to the melting temperature of the barrier material and the

relation of that melting temperature to the temperature at which dough ingredients are combined and at which the dough composition is stored. A supported rejection additionally requires a discussion of how the prior art references could be modified to arrive at the subject matter of claim 29, and how the prior art would have suggested such a modification in a way that would have provided motivation for one of skill to arrive at the subject matter of claim 29. None of these elements is present in the rejections of record. There is no mention of the method steps featured in claim 29, or how those steps are believed to be taught or suggested by the cited prior art references. As such, the rejections of claims 29 through 34 are not supported and should be withdrawn or overturned.

D. THE METHODS OF CLAIMS 35 AND 40 THROUGH 42 ARE NOT SHOWN TO HAVE BEEN SUGGESTED BY THE ATWELL REFERENCE, OR BY THE ATWELL REFERENCE COMBINED WITH THE KATZ REFERENCE

Claim 35 recites a method of producing a cooked dough product. The method includes combining dough ingredients that include a basic active ingredient and an acidic active ingredient, the basic active ingredient and the acidic active ingredient being separated by a barrier material. The dough ingredients are combined at a temperature below the melting temperature of the barrier material, and the barrier material has a solid fat index of at least about 50% at 75°F. The dough composition is refrigerated at a temperature below the melting temperature of the barrier material, and the dough composition is then baked at a temperature that raises the bulk dough composition to a baking temperature above the melting temperature of the barrier material.

Claims 40 through 42 depend from claim 35 and include the features of claim 35.

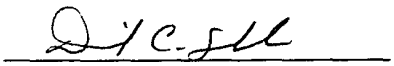
The rejection is silent regarding how either reference is believed to teach or suggest the specific steps recited in claim 35, relating to combining ingredients and storing the dough composition at temperatures below the melting point of the barrier material. A supported rejection of obviousness would include a discussion of these features of claim 35. A supported rejection also requires a discussion of how the cited prior art references are believed to differ from claim 35, e.g., with respect to the melting temperature of the barrier material and the relation of that melting temperature to the temperature at which dough ingredients are combined and at which the dough composition is stored. A supported rejection additionally

requires a discussion of how the prior art references could be modified to arrive at the subject matter of claim 35, and how the prior art would have suggested such a modification in a way that would have provided motivation for one of skill to arrive at the subject matter of claim 35. None of these elements is present in the rejections of record. There is no mention of the method steps featured in claim 35, or how those steps are believed to be taught or suggested by the cited prior art references. As such, the rejections of claims 35 and 40 through 42 are not supported and should be withdrawn or overturned.

Conclusion

In view of these remarks, it is respectfully submitted that pending claims 1-42 are in condition for allowance. Accordingly, it is respectfully submitted that the rejections of the claims under 35 U.S.C. § 103 be withdrawn or overturned.

Respectfully Submitted,

By: 

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#8987

IX. Appendix – Claims on Appeal

1. (previously amended) A dough composition comprising a basic active ingredient, an acidic active ingredient, and a barrier material, wherein

at below baking temperature the barrier material separates encapsulated basic active ingredient from acidic active ingredient to inhibit reaction of basic active ingredient and acidic active ingredient,

the acidic active ingredient is selected to have relatively low solubility in the dough composition below baking temperature and to be substantially soluble in the bulk dough composition during baking, and

the barrier material degrades at or above the baking temperature to allow the basic active ingredient and acidic active ingredient to come into contact in the dough composition and react to substantially leaven the dough composition during baking.

2. (original) The composition of claim 1 wherein the dough composition has a raw specific volume in the range from about 1.0 to about 1.6 cubic centimeters per gram, and the dough composition can be baked to a specific volume of at least about 2.0 cubic centimeters per gram.

3. (previously amended) The composition of claim 1 wherein the dough composition contains from about 0.25 to about 2 wt% basic active ingredient encapsulated in the barrier material, and an amount of acidic active ingredient to neutralize the encapsulated basic active ingredient.

4. (original) The composition of claim 3 wherein the composition contains no other leavening ingredient except for the separated about 0.25 to about 2 wt% basic active ingredient and the amount of acidic active ingredient to neutralize the about 0.25 to about 2 wt% encapsulated basic active ingredient.

5. (original) The composition of claim 1 wherein the acidic active ingredient comprises a suspended solid that is relatively insoluble at processing and refrigerated storage temperatures, which dissolves and solubilizes into the aqueous phase of the dough composition when the dough composition reaches a baking temperature in the range from about 100°F to 200°F.

6. (original) The composition of claim 1 wherein the acidic active ingredient has a solubility of greater than 35 kcal/mole.

7. (previously amended) The composition of claim 1 wherein the acidic active ingredient exhibits solubility behavior similar to sodium aluminum phosphate.

8. (original) The composition of claim 1 wherein the acidic active ingredient is sodium aluminum phosphate.

9. (original) The composition of claim 1 comprising encapsulated particles comprising basic active ingredient and barrier material.

10. (original) The composition of claim 9 wherein the basic active ingredient is soluble in a water phase of the dough composition at one or more of a processing or refrigeration storage temperature.

11. (original) The composition of claim 9 wherein the basic active ingredient is chosen from the group consisting of sodium bicarbonate, potassium bicarbonate, ammonium bicarbonate, and combinations thereof.

12. (original) The composition of claim 1 wherein the barrier material has a melting temperature of at least 90°F.

13. (original) The composition of claim 12 wherein the barrier material comprises a fat-type barrier material selected from the group consisting of palm oil, palm kernel oil, canola oil, a synthetic analog of palm kernel oil or canola oil, and combinations thereof.

14. (original) The composition of claim 9 wherein the encapsulated particles comprise from about 40 to about 65 weight percent active basic material.

15. (original) The composition of claim 9 wherein the encapsulated particles have an average size in the range from about 100 to about 420 microns.

16. (original) The composition of claim 1 wherein the basic active ingredient is sodium bicarbonate.

17. (original) The composition of claim 1 wherein the baking temperature is in the range from about 100°F to about 200°F.

18. (previously amended) The composition of claim 1 wherein the barrier material has a solid fat index of at least about 50% at 75°F.

19. (original) The composition of claim 1 comprising encapsulated particles comprising particulates of basic active ingredient dispersed in a barrier material coating, wherein the size and composition of the particulates, and the relative amount, thickness, and composition of the barrier material coating, are selected such that the basic active ingredient particulates become exposed to bulk dough composition and become hydrated during baking.

20. (previously amended) The dough composition of claim 1 comprising encapsulated particles comprising basic active ingredient particulates coated by barrier material, and further comprising encapsulated particles comprising acidic active ingredient particulates coated by barrier material.

21. (original) The composition of claim 20 wherein the dough composition has a raw specific volume prior to cooking in the range from about 1.0 to about 1.6 cubic centimeters per gram, and the dough composition can be baked to a specific volume in the range from about 2.0 to about 3.0 cubic centimeters per gram.

22. (original) The composition of claim 20 wherein the barrier materials are the same or different, and each independently has a melting point in the range from about 90°F to about 160°F.

23. (original) The composition of claim 20 wherein the barrier materials are the same or different and independently comprise a vegetable oil chosen from the group consisting of palm kernel oil, canola oil, a synthetic analog of palm oil, palm kernel oil or canola oil, and combinations thereof.

24. (original) The dough composition of claim 20 wherein

at below baking temperature the barrier materials separate each of the basic active ingredient and acidic active ingredient from bulk dough composition, and

the barrier materials degrade at or above baking temperature to allow the basic active ingredient and acidic active ingredient to come into contact in the bulk dough composition to react and leaven the dough composition during baking.

25. (original) The dough composition of claim 20 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium aluminum sulfate, sodium acid pyrophosphate, monosodium phosphate, monocalcium phosphate monohydrate, anhydrous monocalcium phosphate, dicalcium phosphate dihydrate, and mixtures thereof.

26. (original) The dough composition of claim 20 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium acid pyrophosphate, and mixtures thereof.

27. (previously amended) A dough composition comprising a basic active ingredient, an acidic active ingredient, and a barrier material, wherein

at below baking temperature, barrier material separates basic active ingredient from acidic active ingredient to inhibit reaction of basic active ingredient and acidic active ingredient,

the barrier material degrades at or above baking temperature to allow the basic active ingredient and acidic active ingredient to come into contact in the dough composition and substantially leaven the dough composition during baking, and

the barrier material has a solid fat index of at least about 50% at 75°F.

28. (original) The composition of claim 27 wherein the barrier material comprises a vegetable oil selected from the group consisting of palm oil, palm kernel oil, canola oil, and combinations thereof.

29. (previously amended) A method of producing a cooked dough product, the method comprising

combining dough ingredients into a bulk dough composition comprising a basic active ingredient and an acidic active ingredient, the basic active ingredient is encapsulated with barrier material, wherein the dough ingredients are combined at a temperature below the melting temperature of the barrier material, and wherein the acidic active ingredient is selected to have relatively low solubility in the dough composition at below baking temperature,

refrigerating the dough composition at a temperature below the melting temperature of the barrier material, and

baking the dough composition at a temperature that causes bulk dough composition to reach a baking temperature above the melting temperature of the barrier material such that the barrier material melts, exposing one or more of the basic active ingredient or the acidic active ingredient to the bulk dough composition, allowing the basic active ingredient and acidic active ingredient to react to leaven the dough composition during baking.

30. (original) The method of claim 29 wherein the dough composition contains from about 0.25 to about 2 weight percent basic active ingredient separated by barrier material from an amount of acidic active ingredient sufficient to neutralize the basic active ingredient.

31. (original) The method of claim 29 wherein the barrier material has a melting point in the range from about 90°F to about 160°F.

32. (original) The method of claim 29 wherein the basic active ingredient is chosen from the group consisting of sodium bicarbonate, potassium bicarbonate, ammonium bicarbonate, and mixtures thereof.

33. (original) The method of claim 32 wherein the baking temperature is greater than 100°F.

34. (original) The method of claim 29 wherein the barrier material comprises a hydrophobic material selected from the group consisting of a fat, an emulsifier, and combinations thereof.

35. (original) A method of producing a cooked dough product, the method comprising

combining dough ingredients into a bulk dough composition comprising a basic active ingredient and an acidic active ingredient, the basic active ingredient and the acidic active ingredient being separated by a barrier material, wherein the dough ingredients are combined at a temperature below the melting temperature of the barrier material, and wherein the barrier material is a fat-type barrier material having a solid fat index of at least about 50% at 75°F, and

refrigerating the dough composition at a temperature below the melting temperature of the barrier material, and

baking the dough composition at a temperature that raises the bulk dough composition to a baking temperature above the melting temperature of the barrier material such that the barrier material melts, exposing one or more of the basic active ingredient or acidic active ingredient to the bulk dough composition, allowing the basic active ingredient and acidic active ingredient to react to leaven the dough composition during baking.

36. (previously added) The composition of claim 1 wherein

the basic active ingredient is encapsulated by a barrier material having a solid fat index of at least about 50% at 75°F,

the acidic active ingredient is not encapsulated.

37. (previously added) The dough composition of claim 27 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium aluminum sulfate, sodium acid pyrophosphate, monosodium phosphate, monocalcium phosphate monohydrate, anhydrous monocalcium phosphate, dicalcium phosphate dihydrate, and mixtures thereof.

38. (previously added) The composition of claim 27 wherein the acidic active ingredient exhibits solubility behavior similar to sodium aluminum phosphate.

39. (previously added) The dough composition of claim 27 wherein the acidic active ingredient is sodium aluminum phosphate.

40. (previously added) The method of claim 35 wherein the acidic active ingredient is selected from the group consisting of sodium aluminum phosphate, sodium aluminum sulfate, sodium acid pyrophosphate, monosodium phosphate, monocalcium phosphate monohydrate, anhydrous monocalcium phosphate, dicalcium phosphate dihydrate, and mixtures thereof.

41. (previously added) The method of claim 35 wherein the acidic active ingredient exhibits solubility behavior similar to sodium aluminum phosphate.

42. (previously added) The method of claim 35 wherein the acidic active ingredient is sodium aluminum phosphate.